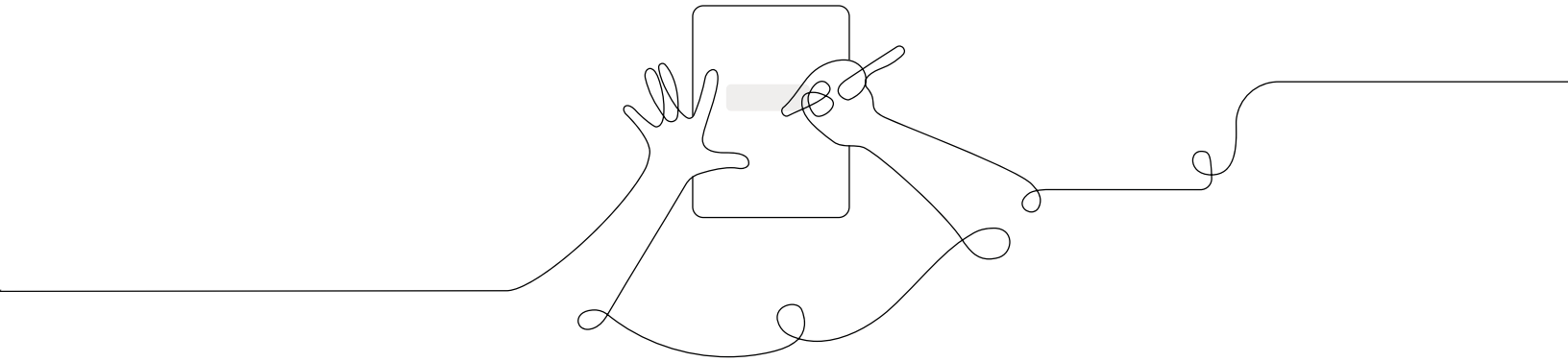
AmplifyScience

Participant Notebook

Unit Internalization and Guided Planning

Grade 8, Natural Selection



Unit Guide resources

Once a unit is selected, select **JUMP DOWN TO UNIT GUIDE** in order to access all unit-level resources in an Amplify Science unit.

Planning for the unit

Unit Overview	Describes what's in each unit, the rationale, and how students learn across chapters
Unit Map	Provides an overview of what students figure out in each chapter, and how they figure it out
Progress Build	Explains the learning progression of ideas students figure out in the unit
Getting Ready to Teach	Provides tips for effectively preparing to teach and teaching the unit in your classroom
Materials and Preparation	Lists materials included in the unit's kit, items to be provided by the teacher, and briefly outlines preparation requirements for each lesson
Science Background	Adult-level primer on the science content students figure out in the unit
Standards at a Glance	Lists Next Generation Science Standards (NGSS) (Performance Expectations, Science and Engineering Practices, Disciplinary Core Ideas, and Crosscutting Concepts), Common Core State Standards for English Language Arts, and Common Core State Standards for Mathematics

Teacher references

Lesson Overview Compilation	Lesson Overview of each lesson in the unit, including lesson summary, activity purposes, and timing
Standards and Goals	Lists NGSS (Science and Engineering Practices, Disciplinary Core Ideas, and Crosscutting Concepts) and CCSS (English Language Arts and Mathematics) in the unit, explains how the standards are reached
3-D Statements	Describes 3-D learning across the unit, chapters, and in individual lessons
Assessment System	Describes components of the Amplify Science Assessment System, identifies each 3-D assessment opportunity in the unit
Embedded Formative Assessments	Includes full text of formative assessments in the unit
Books in This Unit	Summarizes each unit text and explains how the text supports instruction
Apps in This Unit	Outlines functionality of digital tools and how students use them (in grades 2-5)

Printable resources

Copymaster Compilation	Compilation of all copymasters for the teacher to print and copy throughout the unit
Investigation Notebook	Digital version of the Investigation Notebook, for copying and projecting
Multi-Language Glossary	Glossary of unit vocabulary in multiple languages
Print Materials (8.5" x 11")	Digital compilation of printed cards (i.e. vocabulary cards, student card sets) provided in the kit
Print Materials (11" x 17")	Digital compilation of printed Unit Question, Chapter Questions, and Key Concepts provided in the kit

Unit Map

What caused the newt population in Oregon State Park to become more poisonous?

According to local legend around Oregon State Park, three unfortunate campers were found dead at their campsite and investigators found only one clue—a rough-skinned newt inside the coffeepot that the campers used to make their morning coffee. Student biologists investigate what caused the rough-skinned newts of Oregon State Park to become so poisonous. They uncover the mechanisms of natural selection, investigating variation in populations, survival and reproduction, and mutation.

Chapter 1: What caused this newt population to become more poisonous?

Students figure out: There is variation in poisonousness among individuals in the newt population. Because of the presence of predators (snakes), the more poisonous traits were adaptive. Over time, the newts with higher poisonous-level traits became more common in the newt population. An adaptive trait will become more common, but a trait does not appear in a population just because it would be helpful, and individual newts did not change their amount of poison.

How they figure it out: Using the Sim, students explore variation in populations and test when traits will become common. They use a physical model of variation in a population, and analyze histogram evidence about the newt population. They correct alternate conceptions represented in a short comic strip and represent their own ideas by creating visual models.

Chapter 2: How did the trait for increased poison level become more common in the newt population?

Students figure out: Poisonousness became more common in the newt population because newts with higher levels of poison were likely to survive longer than newts without these traits. Surviving longer means the newts had more chances to reproduce. Newts have poisonous levels that are similar to their parents because genes, and therefore traits, are passed on from parent to offspring. Because more poisonous newts could survive longer and create more poisonous newt offspring, highly poisonous newts became more common in the population.

How they figure it out: Students use a physical model to investigate reproduction and traits, and use the Sim to investigate how adaptive traits affect survival and reproduction. They read an article that describes scientists' research on poisonousness as an adaptive trait. They correct the explanations in two more short comic strips and create visual models to represent their explanations.

Chapter 3: How did a poison-level trait that wasn't always present in the newt population become the most common trait?

Students figure out: A trait for extreme poisonousness was introduced into the newt population as the result of a mutation. Because the newts' predator, the garter snake, had some individuals with high poison resistance, the newts with the extreme poison were able to survive longer and reproduce more than other newts, passing on the trait for extreme poison to future generations. As this cycle of surviving and reproducing repeated over many generations, the trait for extreme poison became more common in the population.

How they figure it out: Students read about mutations and how they can cause new traits to appear in populations. They investigate mutations in the Sim. They correct one more misconception in a comic. They make a final visual model and write a final explanation of what made the newts become so poisonous.

Chapter 4: Students apply what they learn to a new question—What caused the stickleback population to have less armor and become faster?

Stickleback are small fish with protective spines on their back. Sticklebacks appeared in a lake in Alaska where they had never lived before, and after several generations, the stickleback population changed so that the fish has less armor and swims faster. Students investigate whether this was because these new traits allow the fish to better escape predators or to better catch prey. They engage in oral argumentation in a student-led discourse routine called a Science Seminar, and then they write final arguments.

Progress Build

Each Amplify Science Middle School unit is structured around a unit-specific learning progression, which we call the Progress Build. The unit's Progress Build describes the way students' explanatory understanding of the unit's focal phenomena is likely to develop and deepen over the course of a unit. It is an important tool in understanding the structure of a unit and in supporting students' learning: it organizes the sequence of instruction (generally, each level of the Progress Build corresponds to a chapter), defines the focus of assessments, and grounds the inferences about student learning progress that guide suggested instructional adjustments and differentiation. By aligning instruction and assessment to the Progress Build (and therefore to each other), evidence about how student understanding is developing may be used during the course of the unit to support students and modify instruction in an informed way.

The *Natural Selection* Progress Build consists of three levels of science understanding. To support a growth model for student learning progress, each level encompasses all of the ideas of prior levels and represents an explanatory account of unit phenomena, with the sophistication of that account increasing as the levels increase. At each level, students add new ideas and integrate them into a progressively deeper understanding of the mechanisms by which the distribution of traits in a population change in response to changes in factors of an environment affecting organisms' survival. Since the Progress Build reflects an increasingly complex yet integrated explanation, we represent it by including the new ideas for each level in bold.

Prior knowledge (preconceptions). At the start of the *Natural Selection* unit, middle school students will have had some exposure to ideas included in the unit. Students will have experience with trait diversity in humans and familiar species, such as dogs and cats, but they may not have extensive experience considering variation in less familiar species. For example, students may believe that all members of a species have the exact coloration pattern used to camouflage them from predators, making all individuals equally likely to survive in the environment. The concept of change in trait distribution over time depends on an understanding of variation. Students will recognize that certain traits are more helpful for survival and that the most helpful traits depend on factors in the organisms' environments. Students will likely have heard of major environmental changes that cause organisms to die off. Some students may know that these factors can make certain individuals more likely to survive than others; others may believe that environmental changes make all individuals in a population less likely to survive.

Progress Build Level 1: Adaptive traits become more common while traits that are non-adaptive become less common in a population over many generations.

Populations change because individuals with certain traits are more likely to survive in a particular environment than individuals with other traits. Given factors in the environment that affect which traits are more likely to survive, adaptive traits will become more common in the population over time. If the adaptive trait isn't present in the starting population, it cannot become more common over time. Changes in the environment cause changes to the distribution of traits in a population.

Progress Build Level 2: Individuals with adaptive traits are more likely to live longer and pass on those traits to their offspring.

Populations change because individuals with certain traits are more likely to survive in a particular environment than individuals with other traits. Given factors in the environment that affect which traits are more likely to survive, adaptive traits will become more common in the population over time. If the adaptive trait isn't present in the starting population, it cannot become more common over time. Changes in the environment cause changes to the distribution of traits in a population. **Individuals with adaptive traits are more likely to live longer and have offspring; individuals**

with non-adaptive traits are more likely to die without having offspring. Offspring inherit traits from their parents. Over many generations, adaptive traits become more common because more of those individuals live long enough to reproduce. Over many generations, non-adaptive traits become less common because fewer individuals with those traits survive and reproduce.

Progress Build Level 3: Mutations can sometimes introduce new traits into a population.

Populations change because individuals with certain traits are more likely to survive in a particular environment than individuals with other traits. Given factors in the environment that affect which traits are more likely to survive, adaptive traits will become more common in the population over time. If the adaptive trait isn't present in the starting population, it cannot become more common over time. Changes in the environment cause changes to the distribution of traits in a population. Individuals with adaptive traits are more likely to live longer and have offspring; individuals with non-adaptive traits are more likely to die without having offspring. Offspring inherit traits from their parents. Over many generations, adaptive traits become more common because more of those individuals live long enough to reproduce. Over many generations, non-adaptive traits become less common because fewer individuals with those traits survive and reproduce. **Occasionally, an individual is born with a mutation, introducing a new trait into a population. If the mutant trait is helpful for survival, the offspring of that individual are more likely to survive and become more common. Mutant traits that are non-adaptive do not become more common in a population.**

Guided Unit Internalization Planner

Unit-level internalization

Unit title:

What is the phenomenon students are investigating in your unit?	
Unit Question:	**Student role:**
By the end of the unit, students figure out ...	
What science ideas do students need to figure out in order to explain the phenomenon?	

Unit Guide Document

Unit Map

Lesson Overview Compilation

Unit Map

Progress Buld

Guided Unit Internalization

Part 1: Unit-level internalization

Unit title: Natural Selection

What is the phenomenon students are investigating in your unit?

What caused the rough-skinned newts of Oregon State Park to become so poisonous?

Unit Question:

Why do populations change over time?

Student role:

Student biologists

By the end of the unit, students figure out ...

A trait for extreme poisonousness was introduced into the newt population as the result of a mutation. Because the newts' predator, the garter snake, had some individuals with high poison resistance, the newts with the extreme poison were able to survive longer and reproduce more than other newts, passing on the trait for extreme poison to future generations. As this cycle of surviving and reproducing repeated over many generations, the trait for extreme poison became more common in the population.

What science ideas do students need to figure out in order to explain the phenomenon?

Adaptive traits become more common while traits that are non-adaptive become less common in a population over many generations. Individuals with adaptive traits are more likely to live longer and pass on those traits to their offspring. Mutations can sometimes introduce new traits into a population.

Weather Patterns @Home Lesson Index

The Amplify Science@Home Units are versions of Amplify Science units adapted for use in a remote learning or hybrid learning situation. To help you plan instruction, below we have listed the @Home Lessons alongside the Amplify Science unit's Lesson(s) from which they come.

Index: @Home Unit Lessons and corresponding *Weather Patterns* Lessons

@Home Lesson	**Adapted from Amplify Science *Weather Patterns***
@Home Lesson 1	Lesson 1.2
@Home Lesson 2	Lesson 1.3
@Home Lesson 3	Lesson 1.4
@Home Lesson 4	Lesson 1.5
@Home Lesson 5	Lesson 1.6
@Home Lesson 6	Lesson 2.1
@Home Lesson 7	Lesson 2.2
@Home Lesson 8	Lesson 2.3
@Home Lesson 9	Lesson 2.4
@Home Lesson 10	Lesson 3.1
@Home Lesson 11	Lesson 3.3
@Home Lesson 12	Lessons 4.1 and 4.2
@Home Lesson 13	Lesson 4.3
@Home Lesson 14	Lesson 4.4

The student sheets and packets used in @Home units are original or modified versions of the unit's Amplify Science Investigation notebook pages or copymasters. When necessary, new pages were also created. In the following table we have outlined the @Home Student Sheet and Packet page titles and their origins.

Index: @Home Student Sheets/Packets and corresponding *Weather Patterns* materials

@Home Lesson	Student Sheet/Packet page title	Investigation Notebook page, copymaster, or print material	Possible Responses
1	Water Cycle in the Sim	New	N/A
1	Exploring Weather and Water at Home	Modified, based on Lesson 1.2 copymaster	Lesson 1.2, Activity 5, Possible Responses
1	*Weather Patterns* Glossary	Lesson 1.2 Digital Resource	N/A
2	Simulating Condensation	Modified from Pgs. 13–14	Lesson 1.3, Activity 3, Possible Responses
2	Temperature Conversions	Modified from Print Materials	N/A
3	Article "What Are Clouds?"	Lesson 1.4 Digital Resource	N/A
4	Making Different Weather Events	Modified from Pgs. 26–27	Lesson 1.5, Activity 3, Possible Responses
5	Word Relationships Routine Chapter 1	Modified from Pg. 31	Lesson 1.6, Activity 2, Possible Responses
5	Modeling Galetown	Modified from Pgs. 32–34	Lesson 1.6, Activity 3, Possible Responses
5	Chapter 1 @Home Science Wall	New, based on Classroom Wall materials	N/A
6	Cooling Air Parcels	Modified from Pg. 41	Lesson 2.1, Activity 2, Possible Responses
7	Article "Disaster in California!"	Lesson 2.2 Digital Resource	N/A
8	Rereading "Disaster in California!"	Pg. 50	Lesson 2.3, Activity 2, Possible Responses
8	Simulating Rainstorms	Modified from Pgs. 51–52	Lesson 2.3, Activity 3, Possible Responses
9	Word Relationships Routine	Modified from Pg. 56	Lesson 2.4, Activity 2, Possible

	Chapter 2		Responses
9	Modeling the Effect of Temperature	Modified from Pgs. 57–60	Lesson 2.4, Activity 3, Possible Responses
9	Chapter 2 @Home Science Wall	New, based on Classroom Wall materials	N/A
10	Make Wind!	New	N/A
10	Make Two Air Parcels	Modified from Pg. 84	Lesson 3.1, Activity 3, Possible Responses
11	Modeling Severe Rainstorms in Galetown	Modified from Pgs. 94–97	Lesson 3.3, Activity 2, Possible Responses
11	Writing an Argument About Galetown's Severe Storms	Modified from Pg. 99	Lesson 3.3, Activity 4, Possible Responses
11	Chapter 3 @Home Science Wall	New, based on Classroom Wall materials	N/A
12	Map of the Carson Wilderness Education Center Area	Lesson 4.1 copymaster	N/A
12	Science Seminar Evidence Cards	Modified, based on Lesson 4.1 copymaster	N/A
12	Discussing and Organizing Evidence	Modified from Pg. 115	N/A
12	Evidence from May at the Wilderness Education Center	Pg. 116	Lesson 4.2, Activity 3, Possible Responses
13	Argumentation Sentence Starters	Print material	N/A
13	Argument Organizer	Lesson 4.3 copymaster	N/A
13	Writing a Scientific Argument	Modified, based on Lesson 4.3 copymaster	Lesson 4.3, Activity 3, Possible Responses
14	Written-Response Question #1	Lesson 4.4 End-of-Unit Assessment copymaster	Lesson 4.4, Activity 2, Possible Responses
14	Written-Response Question #2	Lesson 4.4 End-of-Unit Assessment copymaster	Lesson 4.4, Activity 3, Possible Responses

Multi-day planning, including planning for differentiation and evidence of student work

Day @Home Lesson 1

Minutes for science: 15 min.

Instructional format:
- [x] Asynchronous
- [ ] Synchronous

Lesson or part of lesson:
Introducing the poisonous newts (slides 1-15)

Mode of instruction:
- [x] Preview
- [ ] Review
- [ ] Teach full lesson live
- [ ] Teach using synchronous suggestions
- [x] Students work independently using:
  - [ ] Printed @Home Slides
  - [x] Digital @Home Slides
  - [ ] @Home Videos

Students will...	Teacher will...
View slides and the video that introduces students to the unit. Jot down initial ideas about their reactions to the video.	Assign slides 1-15 in Schoology and provide direction for students to jot down their ideas about the unit problem to share when the class meets together.

Minutes for science: 30 min

Instructional format:
- [ ] Asynchronous
- [x] Synchronous

Lesson or part of lesson:
Summarize the introduction to the unit, make observations of individuals in a population & engage with the simulation.

Mode of instruction:
- [ ] Preview
- [ ] Review
- [ ] Teach full lesson live
- [x] Teach using synchronous suggestions
- [ ] Students work independently using:
  - [ ] Printed @Home Slides
  - [ ] Digital @Home Slides
  - [ ] @Home Videos

Students will...	Teacher will...
Work in groups of three to four to observe the Butterfly Population Cards, then share as a class. They will complete the Sim activity for this Lesson. Finally, they will discuss what they learn from using the Sim, then view the Histogram video and discuss it as well.	Revisit the unit question on slide 12 and the claims on slide 14. Present slides 15-24 giving students an opportunity to observe the butterfly population cards.. Introduce the simulation via slides 25-43 & give students an opportunity to engage with SIM..

Look at the *Students will* columns. What are students working in the lesson(s) that you could collect, review, or provide feedback on?
See Some Types of Written Work in Amplify Science to the right for guidance.

If there isn't a work product listed above, do you want to add one? Make notes below.

Asynchronous: students jot down their initial ideas

Synchronous: record observations while engaging with the simulation and as they explore the butterfly populations

Some Types of Written Work in Amplify Science

- Daily written reflections
- Homework tasks
- Investigation notebook pages
- Written explanations (typically at the end of Chapter)
- Diagrams
- Recording pages for Sim uses, investigations, etc

How will students submit this work product to you?
See the Completing and Submitting Written Work tables to the right for guidance on how students can complete and submit work.

Asynchronous: students jot initial ideas on paper or digitally to bring with them to the asynchronous lesson

Synchronous: Students will use the student sheets to record their observations while engaging with the simulation and submit through Schoology.

Completing Written Work	Submitting Written Work
• Plain paper and pencil (videos include prompts for setup) • (6-8) Student platform • Investigation Notebook • Record video or audio file describing work/answering prompt • Teacher-created digital format (Google Classroom, etc)	• Take a picture with a smartphone and email or text to teacher • Through teacher-created digital format • During in-school time (hybrid model) or lunch/materials pick-up times • (6-8) Hand-in button on student platform

How will you differentiate this lesson for diverse learners? (Navigate to the lesson level on the standard Amplify Science platform and click on differentiation in the left menu.)

Supports:

- Encourage students to engage in student-to-student discussion
- Provide students with the Multi-Language Glossary where appropriate, add images
- Leverage primary language for discussions
- Teacher modeling of the simulation (could also use the video)
- Strategic partnering

Extension: Have students create a visual representation of what they learned from the simulation/discussion.

Multi-day planning, including planning for differentiation and evidence of student work

<table>
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How will you differentiate this lesson for diverse learners? (Navigate to the lesson level on the standard Amplify Science platform and click on differentiation in the left menu.)

@Home Teacher Overview – Chapter 1
Overview of Natural Selection @Home Lessons 1-5

@Home Lesson 1:

- Students are introduced to the unit problem and their role as student biologists. Students make observations to individuals in a population of butterflies in order to learn about traits in a population. Students use the Natural Selection Sim, or watch a video of the Sim investigation, to learn how to make different traits in the populations of the Sim.

@Home Lesson 2:
Breakout Group 1

- Students complete a Sim activity that provides evidence about why an ostrilope population changed over time. Students are introduced to the Modeling Tool and use it to make a prediction about a new ostrilope population. Students test their predictions about Population B in the Sim.

@Home Lesson 3:
Breakout Group 2

- Students run tests in the Sim in order to gather evidence to support or refute the claim that yellow color is always an adaptive trait in a yellow environment. Students use the Modeling Tool to predict how high water storage in a thornpalm population can become more common over time.

@Home Lesson 4:
Breakout Group 3

- Students are introduced to the Write and Share routine, which they use to demonstrate their understanding of why the distribution of traits in a population changes. Students review the @Home Science Wall, including the Chapter Questions, key concepts, and vocabulary. Students use what they have learned to support a claim in order to answer the Chapter 1 Question.

@Home Lesson 5:
Breakout Group 4

- Students use the Sim to gather evidence about whether or not reproduction always results in offspring with adaptive traits. Students learn about where jellies get the glowing trait.

Suggestions for synchronous time

The following are some ideas for making the most of synchronous time with your students. As a general rule, the best way to use your synchronous time is to provide students opportunities to talk to one another, or to observe or visualize things they could not do independently.

Online synchronous time	Notes
Online discussions: It's worthwhile to establish norms and routines for online discussions in science to ensure equity of voice, turn-taking, etc. **Digital tool demonstrations:** You can share your screen and demonstrate, or invite your students to share their screen and think-aloud as they use a Simulation or other digital tool. **Interactive read-alouds**: Screen share a digital book or article, and pause to ask questions and invite discussion as you would in the classroom. **Shared Writing:** This is a great opportunity for a collaborative document that all your students can contribute to. **Co-constructed class charts:** You can create digital charts, or create physical charts in your home with student input.	

Questioning Strategies for Grades 6–8

Overview of the Role of Open-Ended Questioning

Repeated opportunities for students to listen to and speak with others are essential for promoting deep thinking and learning in science. Meaningful teacher-initiated questions create a rich context for promoting open-ended student dialogue and discussion. The *Science Framework for California Public Schools* explains that "Simply providing opportunities to talk is not enough. Effective questioning can scaffold student thinking" (*California Science Framework*, 2016, Chapter 11, p. 21). The Framework suggests that "Teacher-initiated questions are key to helping students expand their communication, reasoning, arguments, and representation of ideas in science" (*California Science Framework*, 2016, Chapter 11, p. 21). The types of questions that teachers pose are instrumental in supporting student understanding. The Framework calls for more open-ended teacher questioning that "prompts and facilitates students' discourse and thinking" and less teacher questioning that prompts "students to seek a confirmatory right answer" (*California Science Framework*, 2016, Chapter 11, p. 6).

The Amplify Science Teacher's Guide is infused with opportunities for students to discuss their developing ideas in response to open-ended prompts. Questions to promote student thinking and discussion are purposefully built into the Teacher's Guide instructional steps and Teacher Support notes that surround all our hands-on and reading activities. In addition, all units include discourse routines (e.g., Shared Listening, Think-Draw-Pair-Share, Write and Share, Word Relationships) that provide opportunities for students to use focal unit vocabulary as they think and talk with partners and the class about their understanding of key science content and practices. Many of the On-the-Fly Assessment suggestions provided throughout each unit offer open-ended follow-up questions that can be used to probe student thinking and formatively assess student understanding of the content. In addition, each unit includes multiple opportunities for students to respond to open-ended questions through additional modalities (e.g., in writing, with diagrams, through a kinesthetic model).

While the prompts embedded in each of the opportunities mentioned above provide fertile ground for student discussion, continued use of flexible, open-ended questions is invaluable for assessing students' knowledge and skills, promoting student-to-student discourse, and guiding student learning. A collection of grade-appropriate questions follows that can be used for these purposes. You will also find a list of activity types included within the Amplify Science curriculum that are particularly conducive to the use of these questions. You may choose to print out these questions and activity types for reference throughout your instruction.

Open-Ended Questions to Facilitate Student Thinking and Discourse

Questions to assess students' knowledge and skills:

- Can you explain how you decided that this claim is the best one?
- Can you explain why X happened?
- Would you (and your partner) explain the steps you went through (to create the model you made)?
- How do you know X?
- If XXX were changed, how would that change YYY?

Questions to promote student-to-student discourse:

- Do you agree or disagree with (that idea)? Why?
- Can you add evidence to support (student name)'s thinking?
- Do you have evidence to go against (refute) (that idea)?
- Does anyone else have something to add to the conversation?
- We are working together right now to figure out/better understand X. Can anyone start us off with some thinking about this (question, problem, idea)?
- Can you explain X, using science vocabulary words XX and YY (from the unit)?
- What claim does this evidence support? How do you know?
- Can you explain why this evidence is important?
- Can you explain why this evidence does not support Claim Y?
- How does your idea relate to what others have said today?

Questions to guide student learning:

- I hear what you are saying (or I read your question/response). Can you explain your thinking to me a bit more so I can understand your idea?
- Some students have said that they think X happened. Can those students work together to find more evidence to support this idea?
- You are claiming that Y happened/explains this phenomenon.
    - Can you find more evidence to support your claim? Please go back to these resources (e.g., simulation, article) and see if you can find more evidence.
    - Which evidence can you use to make a stronger argument?
- How can we investigate why this happened?
- What did you notice? What else do we need to figure out?

Activity Types Within the Amplify Science Curriculum That Are Especially Suited for Additional Teacher Questioning

The activity types listed below are student-centered and often contain prompts for pairs or small groups of students to use to discuss content or to vet evidence together. As you circulate through the classroom during these activities, you can use the open-ended questions to assess students' knowledge and skills, promote student-to-student discourse, and guide student learning.

- Hands-on activities
- Discourse routines (e.g., Write and Share, Word Relationships)
- Discussion after reading
- Paired Modeling Tool activities
- Paired Reasoning Tool activities
- Paired Simulation activities
- Evidence Card sorts
- Evidence Gradient card sorts
- Discussion of evidence in preparation for a Science Seminar (discussing which claim the evidence supports and why, sorting evidence in pairs)
- Science Seminar

Amplify Science@Home resources reference

Use this guide to keep track of the different resources available for remote and hybrid learning.

Instructional materials: Click Remote and hybrid learning resources, then select your grade level from the dropdown menu. Select your unit.	
@Home Unit resources: These will appear when you select your unit.	
Teacher Overview	General information for teaching with @Home Units, planning information, chapter and lesson outlines
Lesson Index	Lists the original Amplify Science lessons associated with each @Home lesson, and the Investigation Notebook pages, copymasters, and print materials associated with the @Home Unit Student Sheets
Family Overview	Information to send home to families to help them support students with remote learning
Student lesson materials for @Home Units	Printable or digital lessons condensed to be about 30 minutes long. You can access compilations of all student materials for your unit, or select from individual lessons.
@Home Video resources: After selecting your grade level and unit, select the @Home Videos tab below your unit title.	
@Home Video links	Links to video lessons that include all activities from the original units. Lesson playlists are on YouTube, and they autoplay in a playlist form.
Additional remote and hybrid instructional materials: These can be accessed from the tabs below your unit title.	
Hands-on investigations support	Videos of every unit's hands-on activities (note, these videos also appear in the student lesson materials).
Read-aloud videos	Link to a YouTube playlist of read-aloud videos of all books in your unit.
Orientation and Tutorials: Click Remote and hybrid learning resources, then select your grade from the dropdown menu. Click Orientation and Tutorials. You'll not only find videos to help you use the resources, but also videos you can share with students and caregivers.	

Notes